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“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartṛhari—Nītiśatakam

“Knowledge is such a treasure which cannot be stolen”



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Indian Standard
SPECIFICATION FOR
GUARDS FOR HARVESTING MACHINES
(*First Revision*)

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Indian Standard

**SPECIFICATION FOR
GUARDS FOR HARVESTING MACHINES**

(First Revision)

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Indian Standard
**SPECIFICATION FOR
GUARDS FOR HARVESTING MACHINES**
(First Revision)

0. FOREWORD

0.1 This Indian Standard (First Revision) was adopted by the Indian Standards Institution on 31 January 1983, after the draft finalized by the Harvesting and Threshing Equipment Sectional Committee had been approved by the Agricultural and Food Products Division Council.

0.2 Guards, also known as fingers, provided in the cutter bar of harvesting machines constitute major part of non-reciprocating mechanism. To ensure interchangeability and quality of guards, this standard was first published in 1970. Subsequently in order to incorporate double-point type of guards this standard has been revised.

0.3 In preparation of this standard, assistance has been derived from Punjab Agricultural University, Ludhiana, in addition to the following:

ISO/DIS 5717-1981 Equipment for harvesting-combine harvester-sickle guards or fingers — Interchangeable dimensions. International Organization for Standardization.

BS 1562 : Part 2 : 1973 Specification for agricultural mower and combine — harvester parts : Part 2 Metric units. British Standards Institution.

0.4 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS : 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard specifies material, dimensional and other requirements for guards (fingers) used in harvesting machines.

*Rules for rounding off numerical values (revised).

2. TYPES

2.1 For the purpose of this standard, the guards shall be of following types:

a) Type A	Single point
Type A ₁	With ledger plate
Type A ₂	Without ledger plate
b) Type B	Double point
Type B ₁	With ledger plate
Type B ₂	Without ledger plate

3. MATERIAL

3.1 The guard (except ledger plate) shall be manufactured from malleable iron casting (*see IS : 2108-1977**), steel casting (*see IS : 1030-1974†*) or steel forging (*see IS : 2004-1978‡*).

3.2 The material for ledger plate, if made separately, shall be the same as given in **3.1** of IS : 6025-1982§.

4. HARDNESS

4.1 The malleable iron casting shall not have hardness more than 163 HB.

4.2 The hardness of ledger plate or the face of the guard working as ledger plate shall have a hardness in the range of 48 to 60 HRC.

5. DIMENSIONS

5.1 The dimensions of Types A₁, A₂, B₁ and B₂ guards shall be as given in Fig. 1, 2, 3 and 4 respectively. The hole for fixing the guard may be square or circular.

5.2 In case separate ledger plate is used, the dimension of the same shall be as given in either Fig. 5 or 6.

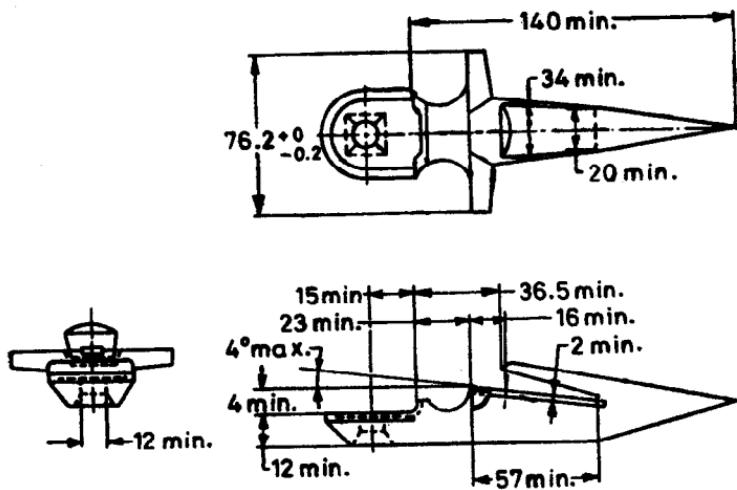
5.3 The dimensions of the slot for ledger plate in the guard shall be such that it ensures the proper fitment of the ledger plate.

*Specification for blackheart malleable iron castings (*first revision*).

†Specification for carbon steel castings for general engineering purposes (*second revision*).

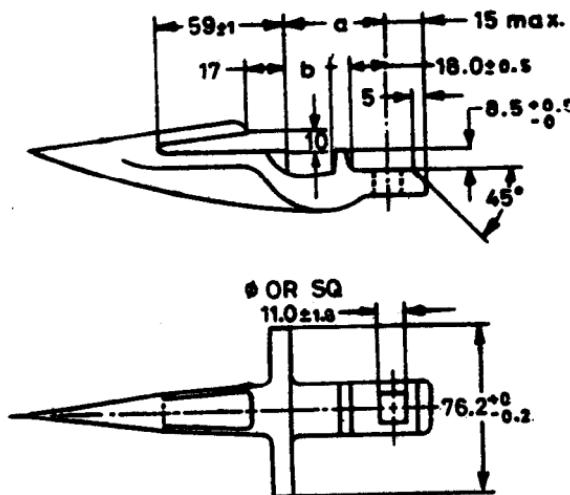
‡Specification for carbon steel forgings for general engineering purposes (*second revision*).

§Specification for knife sections for harvesting machines (*first revision*).



All dimensions in millimetres.

FIG. 1 DIMENSIONS FOR TYPE A₁ GUARD

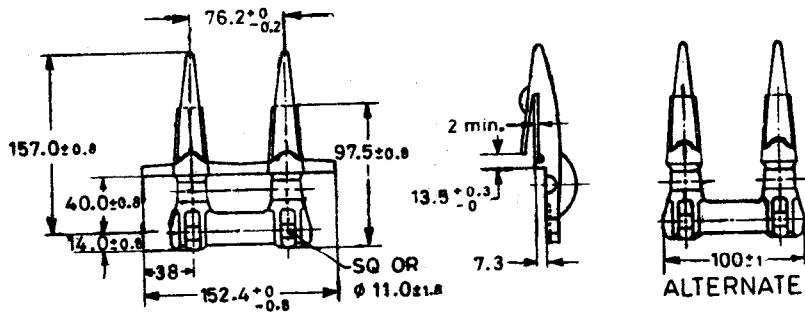


All dimensions in millimetres.

$$a = 48 \text{ mm or } 52 \pm 0.5 \text{ mm}$$

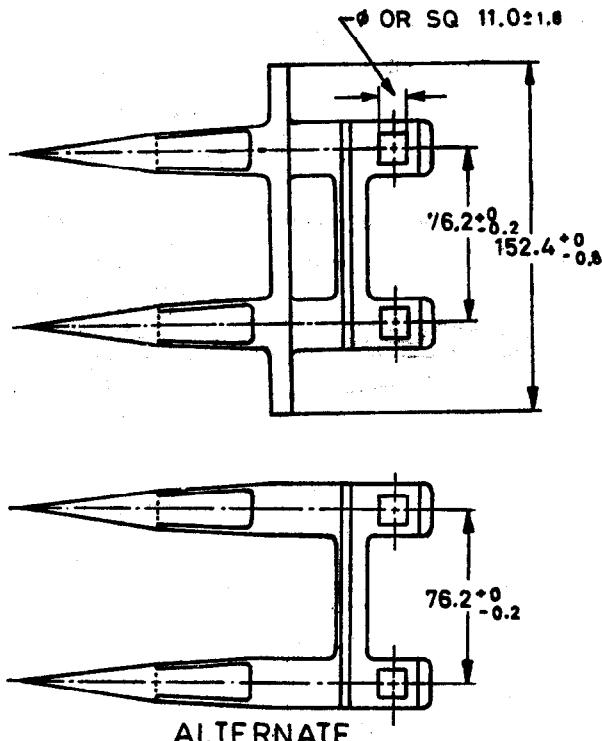
$$b = 23 \text{ mm or } 27 \pm 0.5 \text{ mm}$$

FIG. 2 DIMENSIONS FOR TYPE A₂ GUARD



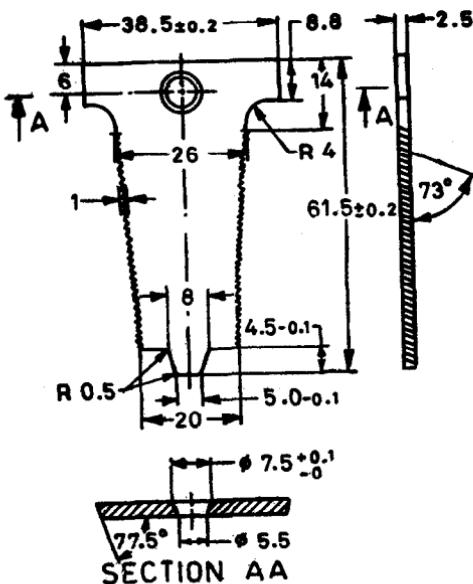
All dimensions in millimetres.

FIG. 3 DIMENSIONS FOR TYPE B₁ GUARD



All dimensions in millimetres.

FIG. 4 DIMENSIONS FOR TYPE B₂ GUARD



All dimensions in millimetres.

FIG. 5 LEDGER PLATE, STRAIGHT-HEAD TYPE

6. WORKMANSHIP AND FINISH

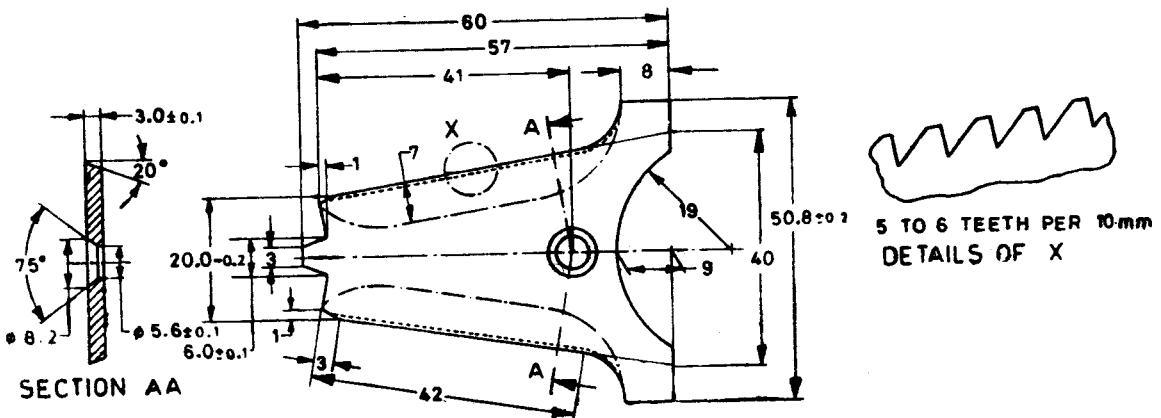
6.1 The guards along with ledger plate, if provided, shall be free from flaws, seams, scratches, cracks and other visual defects.

6.2 The guard shall be given a thin coat of anti-corrosive paint.

7. MARKING AND PACKING

7.1 Marking — Each guard shall be marked with the following particulars on the upper side of the guard:

- Manufacturer's name or recognized trade-mark,
- Type, and
- Batch or code number.



All dimensions in millimetres.

FIG. 6 LEDGER PLATE, CURVE-HEAD TYPE

7.1.1 Each guard may also be marked with the ISI Certification Mark.

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act and the Rules and Regulations made thereunder. The ISI Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

7.2 Packing — Guards of the same type shall be packed for safe handling in transit, in accordance with the agreement between the purchaser and the supplier.

8. SAMPLING FOR LOT ACCEPTANCE

8.1 Unless otherwise agreed to between the purchaser and the supplier, the method of sampling for lot acceptance shall be as given in 3 of IS : 7201-1974*.

*Method of sampling of agricultural machinery and tractors.

INTERNATIONAL SYSTEM OF UNITS (SI UNITS)

Base Units

QUANTITY	UNIT	SYMBOL
Length	metre	m
Mass	kilogram	kg
Time	second	s
Electric current	ampere	A
Thermodynamic temperature	kelvin	K
Luminous intensity	candela	cd
Amount of substance	mole	mol

Supplementary Units

QUANTITY	UNIT	SYMBOL
Plane angle	radian	rad
Solid angle	steradian	sr

Derived Units

QUANTITY	UNIT	SYMBOL	DEFINITION
Force	newton	N	1 N = 1 kg.m/s ²
Energy	joule	J	1 J = 1 N.m
Power	watt	W	1 W = 1 J/s
Flux	weber	Wb	1 Wb = 1 V.s
Flux density	tesla	T	1 T = 1 Wb/m
Frequency	hertz	Hz	1 Hz = 1 c/s (s ⁻¹)
Electric conductance	siemens	S	1 S = 1 A/V
Electromotive force	volt	V	1 V = 1 W/A
Pressure, stress	pascal	Pa	1 Pa = 1 N/m ²

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Bee-keeping equipment	Meat and meat products
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Cocoa products	Pesticides, technical grade and general
Coffee and its products	Propagation materials
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Dairy industry, methods of test	Spices and condiments
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